Andreas H. W. Küpper

530 Riverside Dr, Apt 5H, New York, NY 10027

+1 (203) 435-8819 · ahwkuepper@gmail.com · ahwkuepper.wordpress.com

Profile

- Creative astrophysicist with focus on statistical analysis, modeling and high-performance computing
- Excellent skills in programming and scripting (e.g., C, Python, Fortran, Shell)
- Expert knowledge in Bayesian statistics and machine learning
- More than 10 years of experience in leadership, advising and communication

Professional Experience

Columbia University, NY, USA, Hubble Research Fellow Since 2013
- Modeled data from large imaging/spectroscopic surveys in a Bayesian framework
- Made statistical analyses of imaging/spectroscopic data of globular clusters
- Developed simulation codes (C/Python/Fortran) for various astrophysical objects

Yale University, CT, USA, Research Fellow 2013
- Developed a Bayesian stream model using Markov Chain Monte Carlo for inference

Universität Bonn, Germany, Postdoctoral Researcher 2011 – 2013
- Created a fast and now widely used modeling method for tidal streams
- Released a C code for generating star clusters from probability distribution functions

European Southern Observatory (ESO), Chile, Visiting Scientist 2012
- Acquired and reduced wide-field imaging data of globular clusters

University of Edinburgh, UK, Visiting Scientist 2007
- Performed high-performance numerical simulations using MPI and OpenMP

Education

Universität Bonn, Germany, Ph.D. in Astronomy, *summa cum laude* 2011
- Made high-performance N-body simulations of tidal streams with CUDA

European Southern Observatory (ESO), Chile, Studentship 2010
- Computed the evolution of star clusters and made statistical comparisons to real data

Penn State University, PA, USA, Bootcamp on Astrostatistics with R June 2010

Universität Bonn, Germany, Diplom in Physics (M.Sc. equivalent) 2007
- Performed numerical simulations of globular clusters on special-purpose computers

Technical Skills

C, Fortran, shell scripting, LATEX, gnuplot	★★★★★
Python, NumPy, SciPy, matplotlib, IPython	★★★★☆
R, IDL, Java, HTML, JavaScript, Excel	★★½☆☆

Professional Activities & Leadership

Coordinator and co-founder of the monthly New York workgroup *GONYC*	Since 2015
Postdoc representative, Columbia Astronomy Department	Since 2014
Referee for 15 peer-reviewed journal articles	Since 2011
Key supervisor of 5 Ph.D., 1 M.Sc. and 1 postbac student	Since 2010
Author of 22 peer-reviewed journal articles and numerous other articles	Since 2008
Speaker at more than 40 international conferences and colloquia	Since 2006
Co-Chair of the ESO conference *SSS-15*, Santiago, Chile	2015
Coordinator of the stream group, *Gaia Challenge*, Barcelona, Spain	2015
Volunteer at *Kids Week*, Intrepid Sea, Air & Space Museum, NY	2015
Coordinator of the journal club, Columbia Astronomy Department	2013 – 2015
Coordinator of the stream group, *Gaia Challenge*, Heidelberg, Germany	2014
Mentor for students, *ISIMA-14* workshop, CITA, Toronto, Canada	2014
Panelist, Hubble Space Telescope (HST) Time Allocation Committee	2014
Reviewer, NASA Earth and Space Science Fellowship Program	2014
Lecturer at a public outreach event, Columbia Astronomy Department	2014
Representative, Physics Student Association, Universität Bonn	2002 – 2007

- President ('06), Treasurer ('04 – '06), Event Organizer ('02 – '06), Editor ('03 – '07)

Selected Grants

Co-investigator of 1 ESO, 1 Spitzer and 3 NOAO programs	Since 2013
Principal investigator of 2 HST and 2 ESO programs [>$100k]	Since 2011
ESO visitor **grant** [>$10k]	2012, 2015
Research **grant** of the German Science Foundation (DFG) [>$180k]	2010 – 2013
Grant of the High-Performance Computing Europa Programme [$2k]	2007

Selected Publications (see ads or my website for a full list)

1. **Küpper, A. H. W.**, Balbinot, E., Bonaca, A., Johnston, K. V., Hogg, D. W., Kroupa, P., Santiago, B. X., *Globular cluster streams as galactic high-precision scales: The poster child Palomar 5.* The Astrophysical Journal, 2015, 803, 80.

2. Frank, M. J., Grebel, E. K., **Küpper, A. H. W.**, *Mass segregation in the outer halo globular cluster Palomar 14.* Monthly Notices of the Royal Astronomical Society, 2014, 443, 815.

3. **Küpper, A. H. W.**, Maschberger, T., Kroupa, P., Baumgardt, H., *Mass segregation and fractal substructure in young massive clusters - I. The McLuster code and method calibration.* Monthly Notices of the Royal Astronomical Society, 2011, 417, 2300.